

Notice of Allowability

Application No.

09/610,390

Examiner

Thomas H. Stevens

Applicant(s)

WAITE ET AL.

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/10/05.
2. ☒ The allowed claim(s) is/are 1-4, 7-14, 19 and 20.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

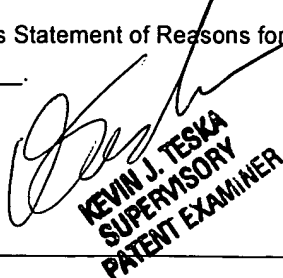
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 5/5/05.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER

DETAILED ACTION

1. Claims 1-14, 19-21 were previously examined.
2. Claims 6 and 21 are canceled.
3. Claims 1-5, 7-14 and 19 and 20 are allowable.

Section I: Response to Applicant's Arguments

Claim Objections

2. Applicants are thanked for addressing this issue. Based on applicants' amendment, the objection to claim 12 is withdrawn.

35 U.S.C. 101

3. Applicants are thanked for addressing this issue. Based on applicant's persuasive argument, rejection is withdrawn.

35 USC § 103

4. Applicants are thanked for addressing this issue. Based on applicant's persuasive argument, rejection is withdrawn.

Section II: Allowance

Reasons for Allowance

6. The prior art of record does not teach or render obviousness the claimed invention as recited in methodology of claims 1 and 10. Baker et al. (U.S. Patent 5,377,119) teaches conditions with permeable mold having a cavity and a runner while performing computations in a stepwise manner to determine the movement of a free surface of the melt and the rate of gas flowing through the mold until the cavity is filled with melt; but doesn't teach a compilation of a *"Flow in Shot Sleeve Module, a Shrinkage Porosity Prediction Module, a Heat Transfer Line Module and a Die Lubricant Cooling Module"* in a set simulation sequence (claim 1); nor does Baker et al. teach *"a shot sleeve and ram for the die as a function of a ram position"* (claim 2) or *"determining the number of heat transfer between the die and fluid in the heat transfer line with the model as a function of temperature as each of the nodes and Reynolds, Prandtl, and Nusselt numbers"* (claim 10).

Though the prior art of record expressly teaches the use a method for simulating thermal flows for a casting/molding process, nowhere does the prior art expressly teach a *"ram for the die"* nor *"a function of ram position"*. Additionally, neither reference teaches nor suggest *"to model a shrinkage of casting"* while *"determining the temperature field according to non-coincident heat transfer between the shot sleeve, the ram, and the thermal fluid flow"*. Based on these facts, motivation to combine is non-existent since the prior art failed to uncover each and every element set forth in the claim, either expressly or inherently described, in a single prior art reference. *Verdegaal*

Bros. Vs. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim". *Richardson vs. Suzuki Motor Co.*, 868 F.2d 1226, 9 UPSQ2d 1913, 1920 (Fed. Cir. 1989). The elements must arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. *In re Bon*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Examiner's Amendment

5. The examiner received permission from attorney James M. Durlacher (Registration number 28840) to amended segments of the prosecution.

Amendments to the Claims

Claim 19, line 4 insert between nozzle and parameters **"including the shape of the spray"**

Claim 19, line 4, between nozzle and the comma, insert **"including the path of travel"**

Claim 6: cancel

Claim 21: cancel

Amendments to the Specification

Pg. 1, line 3 and pg. 13, line 4 add patent number 6,611,736 (issued 8/26/03 verify)

Pg. Line 1, line 14 delete "has become" to **"is"**

Pg. 21, line 4 insert between simulation and the comma insert **"at 1R"**

Pg. 30, last sentence between 100 and the period insert **"at 4H"**

Art Unit: 2123

Pg. 32, line 17 between performed and to insert "**at 5G**".

Pg. 32, last line, between after coefficient, insert "**at 5I**".

Pg. 33, first sentence, after the computed and before the period, insert "**at 5J**".

Pg. 33, last paragraph, second sentence, between reached and the period, insert "**at 5K**".

Pg. 33, second last sentence, lower case t for the, sentence reads "**At 5L**, the simulation.... "

Pg. 34 , line 12, change "meld" to "**mend**"

Pg. 34, 3rd paragraph, between simulation and the period, insert "**at 6A**".

Pg. 35, line 21, change " template" to "**temperature**"

Pg. 36, line 23, between completed and the period, insert "**at 6L**".

Drawings

Formal drawings, including proposed correction to figures 3 & 8-10, are now required.

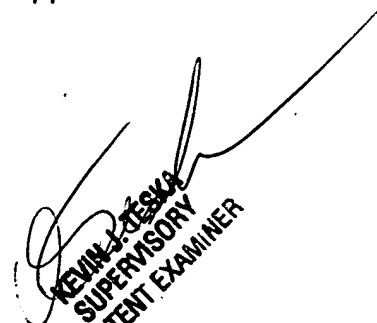
Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm) or contact Supervisor Mr. Kevin Teska at (571) 272-3716. Fax number is 571-273-3715.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

April 25, 2005

THS


KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER